Systematic Instruction: Teaching for Success

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Teri Johnson, Consultation and Training LLC
Seattle, Washington
Teri431@comcast.net

Systematic Instruction
aka Precision Training
aka Structured Teaching
aka Tight Teaching

‣ An approach in response to what was once accepted belief… that label and/or IQ score predicted ability to learn

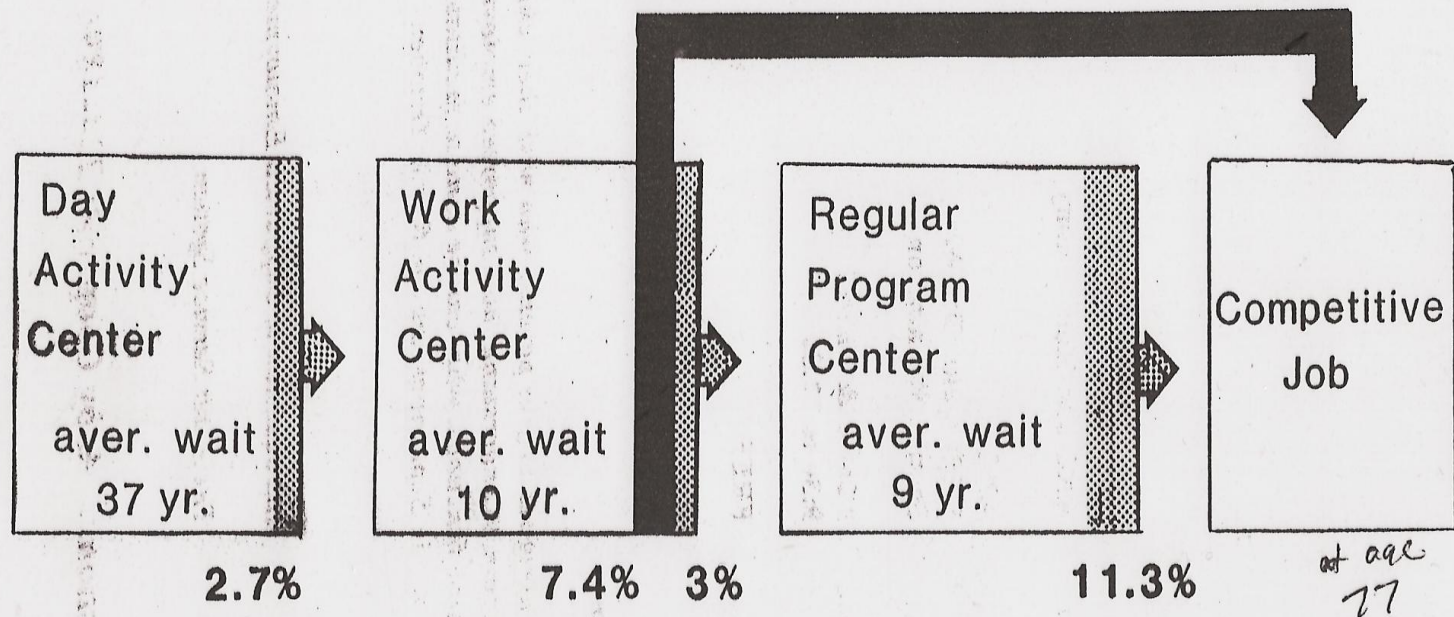"Only a medical man could fully appreciate the educational needs of idiots while also providing the necessary diagnostic tools to separate the idiot, who was amenable to training, from the idiot encumbered by other disabilities, who was not."   Seguin, 1866

Lack of Expectation Reflected in Naming of Services

‣ 1906 Rome State Custodial Asylum for Unteachable Idiots

‣ 1917 Faribault School for the Training of Imbeciles and the Custody of Idiots

CLIENT MOVEMENT THROUGH THE CONTINUUM OF VOCATIONAL SERVICE

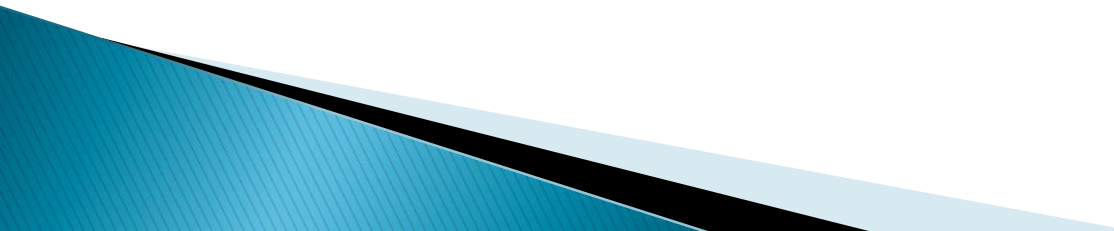| Day Activity Center	Work Activity Center	Regular Program Center	Competitive Job
aver. wait 37 yr.	aver. wait 10 yr.	aver. wait 9 yr.	at age 77
2.7%	7.4% 3%	11.3%	

Based on national research study from 1970's

Percent of lients moving to higher level program during a year

Emerging leaders combined research and values in developing teaching strategies Late 60's into 70's

- Marc Gold, University of Illinois, Try Another Way

- Paul Wehman, Virginia Commonwealth University, Rehabilitation Research and Training Center

- Lou Brown, University of Wisconsin

- Tom Bellamy, University of Oregon, Specialized Training Program

Essential Component in Moving Forward with Employment First and Full Participation

- Original focus: for those with greater challenges in learning new and complex tasks and activities

- Approach to task design, task analysis and teaching strategies allow for consideration of tasks / jobs that may have been perceived as too complex or technical for supported employment candidates

- Teaching strategies focus on increasing independence throughout the task versus a "fade at the end" approach

- A weapon to weaken and destroy the "virtual" readiness model

Systematic Instruction May Be Needed When...

▸ Loose teaching is not getting the person where they want or need to be.

▸ Learning style is best accommodated by systematic instruction.

▸ Activity or task has element of risk if not done correctly.

Important Components

Preparing to teach

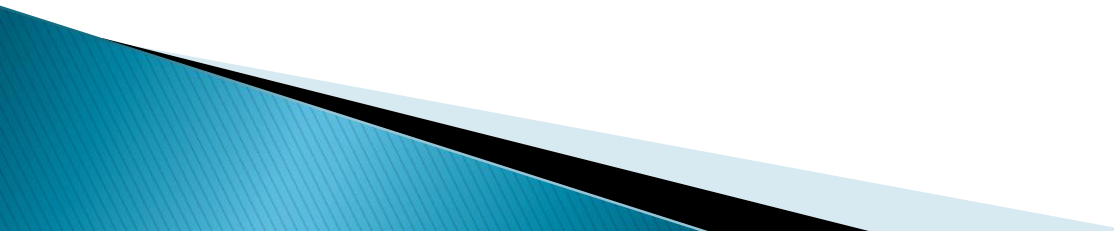- Task Design
- Standard Work
- Task Analysis

Teaching

- Delivering and fading assistance
- Identifying and teaching to cues
- Error correction
- Assessing progress
- Addressing difficult steps
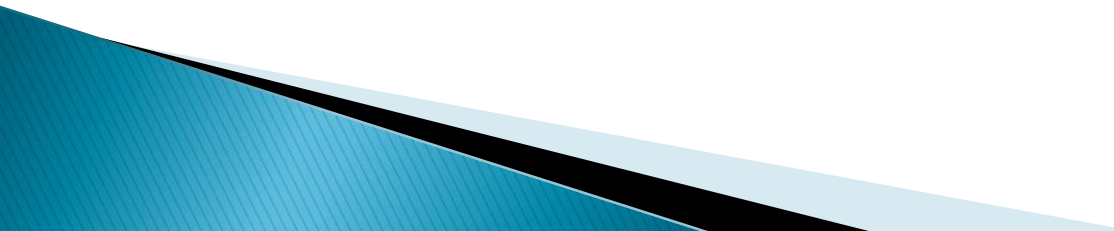
Task Design: Most Appropriate Method for Completing Task

★ Universal Design / Standard Work

★ Efficiency and physical ease

★ Supports learning and independence

Task Design Strategies

What do you see that would make this task/job easier <u>to learn</u>? (natural cues within the job or task that you will teach to)

- The natural, existing cues that exist in a task are the "clues" about what step is next.

- We need to be prepared to teach to the cues in the task from the first time through or we run the risk of becoming the "cue".

- Are there opportunities to highlight or add cues ?

Task Design Strategies

- What do you learn about this task/job that would make it easier <u>to do</u>? (physical demands of job or task: lifting, fine motor, difficult manipulations)

- What might you add to make it easier <u>to remember</u>? (universal design, self-management strategies)

- Is there an opportunity to design so that possibility of errors would be eliminated or minimized? (Error Proofing)

May Have to Address the Cereal vs. Milk Design Situations…

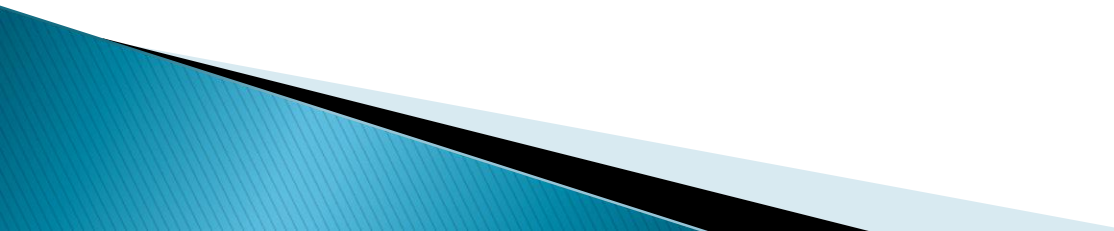"Oh, wait! Wait, Cory! … Add the cereal *first* and *then* the milk!"
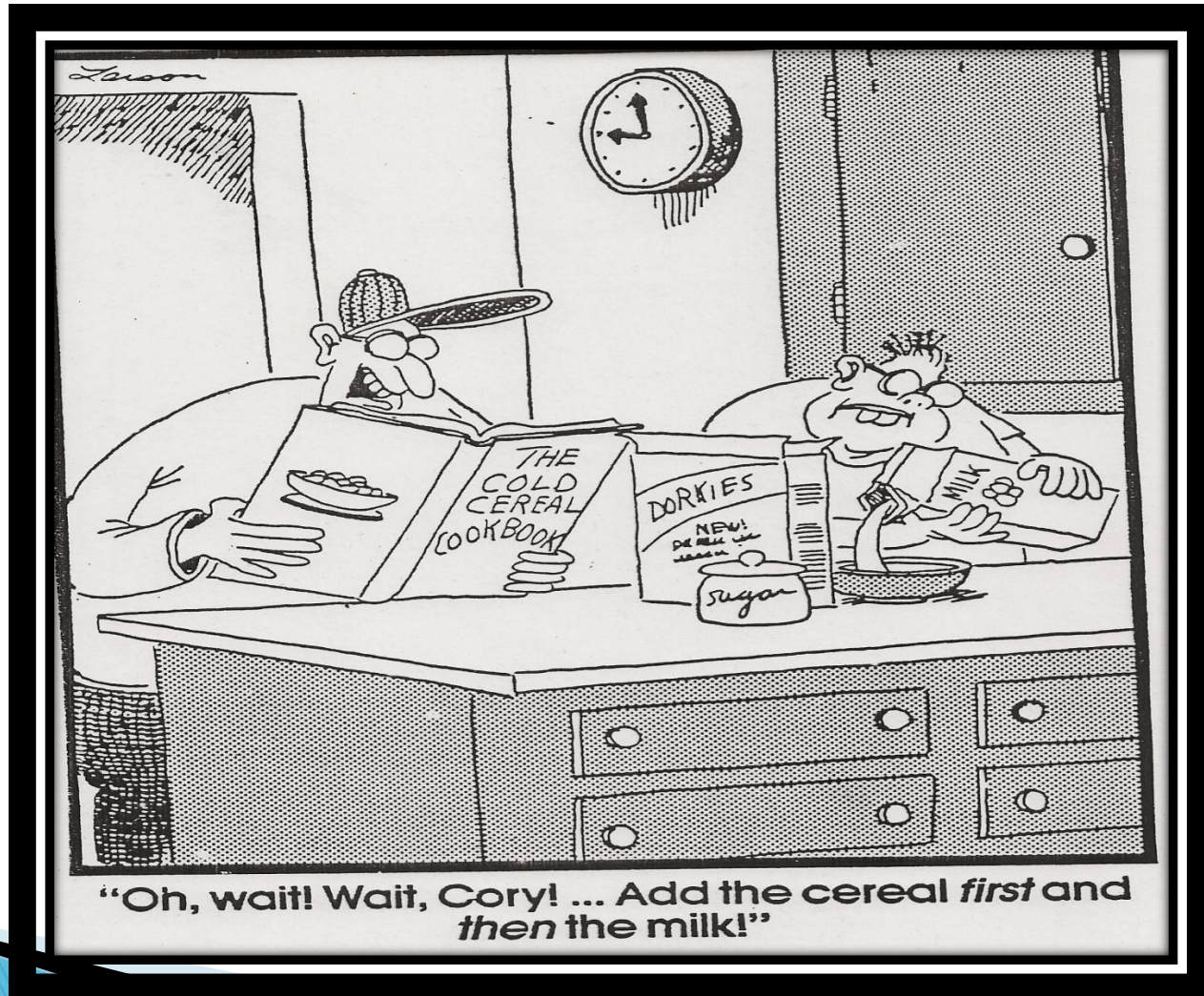
Preparing to Teach: Standardize the Work

> **Standard Work**
> **LEAN Tool for Continuous Improvement**

- Purpose: to make the "best" method consistent among all workers
- Simplest form: checklist
- Outcome: a simple written description of the safest, highest quality and most efficient way known to perform a particular process or task
- Continuous: the "best way today"

Considerations in Standard Work

- In order to establish a standard, the work task or process must be <u>a stable, repeatable process</u>

- To be most effective, the standard should be determined by a group of people, not one person

- Looking to <u>eliminate random activities and inconsistent methods</u> to identify the "best way" (where is there <u>waste</u> of time, resources, movement)

Standard Work or Task Analysis? Detail Depends on Need

- Check water coolers in Reception Rooms 1 and 2; replace if less than ¼ full

- Make coffee and replenish cream/sugar in Reception Rooms 1 and 2

- Check paper and toner level in copiers (8) and fill as needed

- Check for pads and pens in Training Room; replace as needed

- Fill soda machine as needed

Task Analysis – When, Why and How

WHEN   Following job analysis, identification of job tasks (standard work) and in response to individual need.

WHY   A useful tool when the complexity of the task is presenting challenges to the learner (or trainer).

WHY   Focuses trainer attention on the specific demands of the task and cues within the task.

WHY   Allows for breakdown to smaller steps when "step size" is creating issue.

HOW   Breaks the task into discreet, observable steps and lists in order.

Guidelines in Constructing a Task Analysis

- Individualize always: Specific to individual, task and trainer

- Practice with learner, including any changes to task design

- Break into steps and list in order; including cue for each step

- Record in clear, concise manner

Task Analysis – Your Turn!

Task Analysis Form: Efficient, Low Cost Method for Data Collection (Skill Acquisition, Safety, Productivity)

Standard Work Checklist – Larger steps

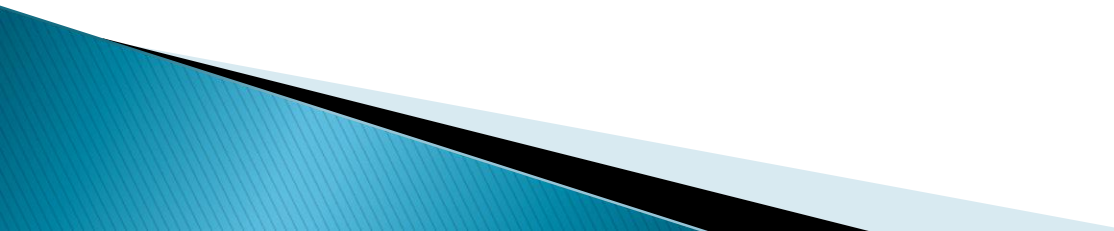| Standard Work - Implemented: 5/2/11								Intern: Sue Smith				
Task: Reception Area Family Resource Center								Trainer: Jim Johnson				
Date		5/2	5/4	5/8	5/10	5/14	5/16					
Major Process Steps												
Reception Area 1	0											
Check water coolers (2); replace if less than 1/4	1	—	—	—	—	—	+					
Gather all magazines - return to rack	2	+	+	+	+	+	+					
Gather all children's books- return to bin	3	+	+	+	+	+	+					
Make coffee	4	—	—	+	+	+	+					
Fill airpot with hot water for tea/cocoa	5	—	+	—	—	—	+					
Clean coffee/tea bar	6	+	+	+	+	+	+					
Check coffee/tea supplies - replenish as needed	7	—	—	+	+	+	+					
Check paper level in copiers (2) - fill as needed	8	—	—	—	+	+	+					
Check toner in copiers (2) - fill as needed	9	—	—	—	—	—	—					
Check pads/pens at recept. - replace as needed	10	+	+	+	+	+	+					
Water plants and remove dead leaves	11	—	—	+	+	+	+					
Check with Manager for additional tasks	12	+	+	+	+	+	+					
Level of Independence		5/12	6/12	8/12	9/12	9/12	11/12					
(minutes) Time		150	155	152	141	133	130					
Key: Independent				+								
Assistance given				-								

Notes: Safety, Quality, Efficiency

Productivity Target: Reception areas 1 should be completed in 2 hours by the end of training period.

Data Collected: Every other day

Task Analysis – Smaller Steps

Task Analysis: Replace toner cartridge	6/6	6/10	6/16	6/23		Intern: Sue Smith				
Job: Reception Family Resource Center						Trainer: Jim Johnson				
2011 Date										
Replace toner cartridges - HP 6310										
1 Gather black and color cartridges from supply	−	+	+	+						
2 Place fingers under printer control panel	−	−	−	+						
3 Lift control panel slowly until it clicks open	+	+	+	+						
4 Place finger on bottom rim of black cartridge	+	+	+	+						
5 Apply pressure down and out to remove	−	−	−	+						
6 Place old cartridge in container for recycle	+	+	+	+						
7 Place finger on bottom rim of color cartridge	+	+	+	+						
8 Apply pressure down and out to remove	−	−	+	+						
9 Place old cartridge in container for recycle	+	+	+	+						
10 Remove black cartridge from package	+	+	+	+						
11 Pull tape from cartridge element	−	+	+	+						
12 Insert cartridge into recept. - #'s up right side	−	−	−	−						
13 Snap into place	−	−	−	−						
14 Remove color cartridge from package	+	+	+	+						
15 Pull tape from cartridge element	−	−	−	−						
16 Insert cartridge into recept. - #'s up left side	−	−	−	−						
17 Snap into place	−	−	−	+						
18 Close lid firmly - error message if not closed	−	−	−	+						
19 Press ok when prompted to align cartridge	+	+	+	+						
20 File printed alignment page in copier notebook	−	+	+	+						
Level of independence (% of steps correct)	8/20	11/20	12/20	16/20						
Speed (time to replace 2 cartridges) minutes	14	12	11	7						
Key: Independent			=	+					
Assistance given			=	−					
Notes: Safety, Quality, Efficiency:										

Data Collection

- Collect data on a probe or intermittent basis

- Maintain consistent training throughout the probe

- Give credit (+) if accurate <u>and</u> independent

- No credit (–) is given if error or assistance is given

- At end of probe, count number of steps (–) and record

Task Analysis Provides Useful Data

Efficient method to track skill acquisition, productivity, and safety.

Sensitive to small gains.

Highlights steps that are difficult and may need change in design or teaching strategy.

Easy to interpret and share.

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Consider Motivation To Learn


Positive Reinforcement: Will Work for Coffee

Likely motivators / reinforcers:

- Learning something new; gaining competence and independence

- Respect, approval of others

- Satisfaction, happiness

- Wages; job security

Delivering and Fading Assistance

Providing additional (external) cues (information) as needed to enable a correct response

Verbal

Written

Modeling

Physical prompts/ gestures

Physical Guidance

Methods will Vary
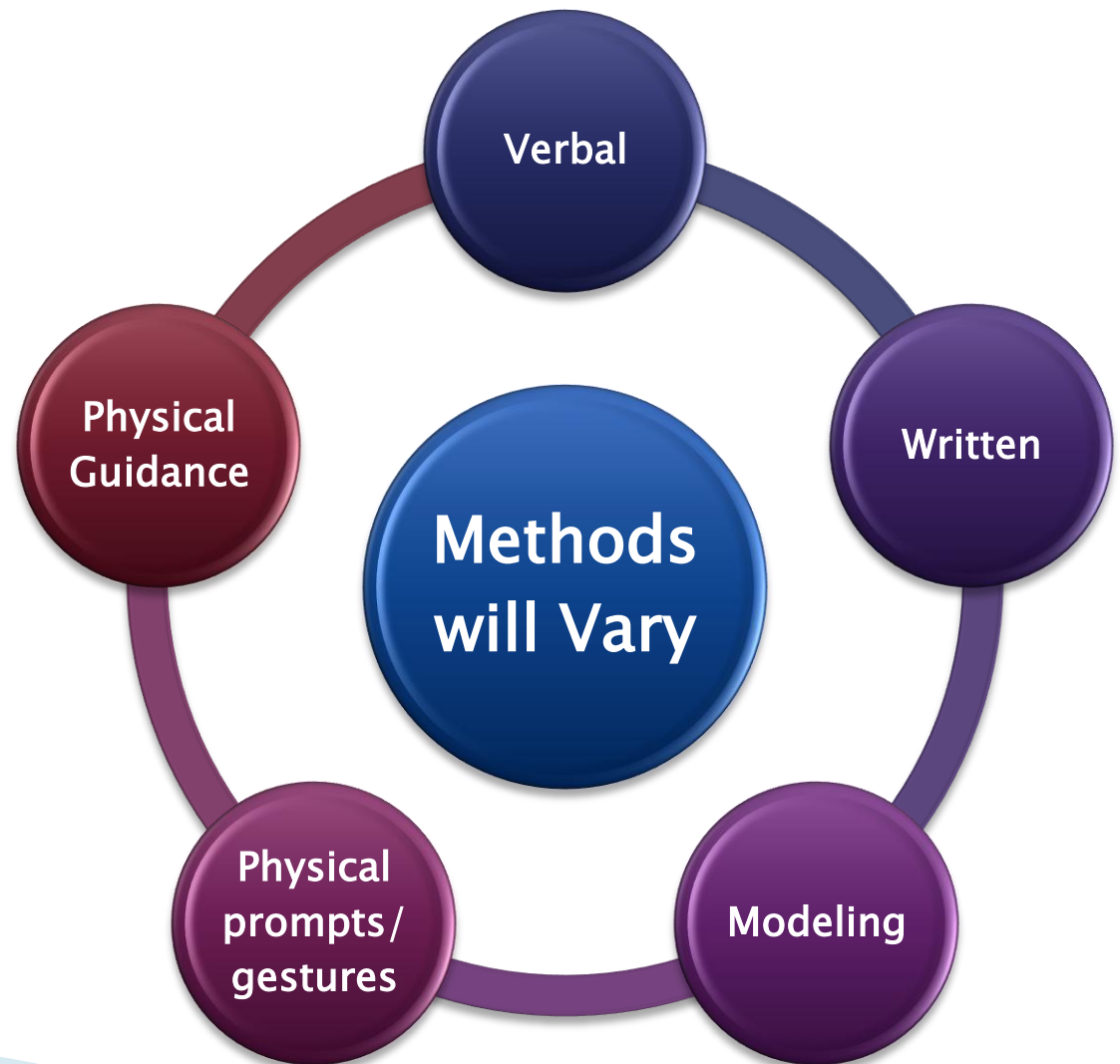
Which method? How much? When?

Take your cue from the learner; learner performance (learning style) will guide you.

In providing assistance:

- Give no more than minimum to get correct response
- Over prompting can lead to cue dependence (allow for time to process)
- Anticipate and avoid errors in early stages of learning
- Always "tie" your assistance to cues in the task

Knowing When and How to Fade

"The most important tool for teaching is the willingness to evaluate what you are doing on a moment by moment basis" Dave Hingsburger

- Transfer your control to the cues in the task; tie the cues to the task, not to you!

- Shifting from external feedback to internal feedback

- Move away from the learner

- Longer delay before prompting

When An Error Occurs

- Approach will differ between those who are "early" in learning and those who are "late" in learning

- When error occurs "early" – interrupt as soon as possible (neutral and non-punishing); back-up to cue for step and support learner with assistance as needed to complete correctly.

- When error occurs "late" – wait to see if learner self-corrects; give prompt with less information "what comes next?", "what did you forget?"
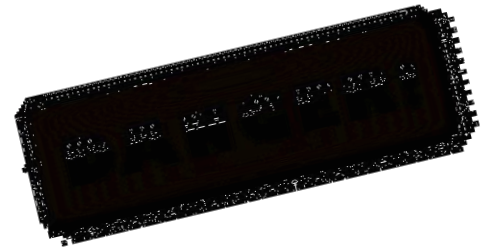
As Learner Gains Independence

Introduce variables <u>likely</u> to occur when participating with less supervision

What could likely happen to "screw this up?" Make it happen.

Frequent interruptions

Damaged parts or materials

Running out of supplies

Provides opportunity to teach to those variables before you have faded from site.

Strategies for Difficult Steps

Difficult Steps: When steps in task are repeatedly incorrect; learner is making little or no progress

- Assess cause of difficulty (Stand In the Circle)

- Consider changes in task design to facilitate learning and performance

- Modify the task and adjust your assistance "easy to hard"

- Consider mass trials: remove step from chain for repeated practice

Power of Positive Reinforcement

Valuable tool in building and strengthening new skills.

- Discreet and appropriate for the setting
- Individualized
- Specific vs. general
- Faded to whatever level will be available when training ends
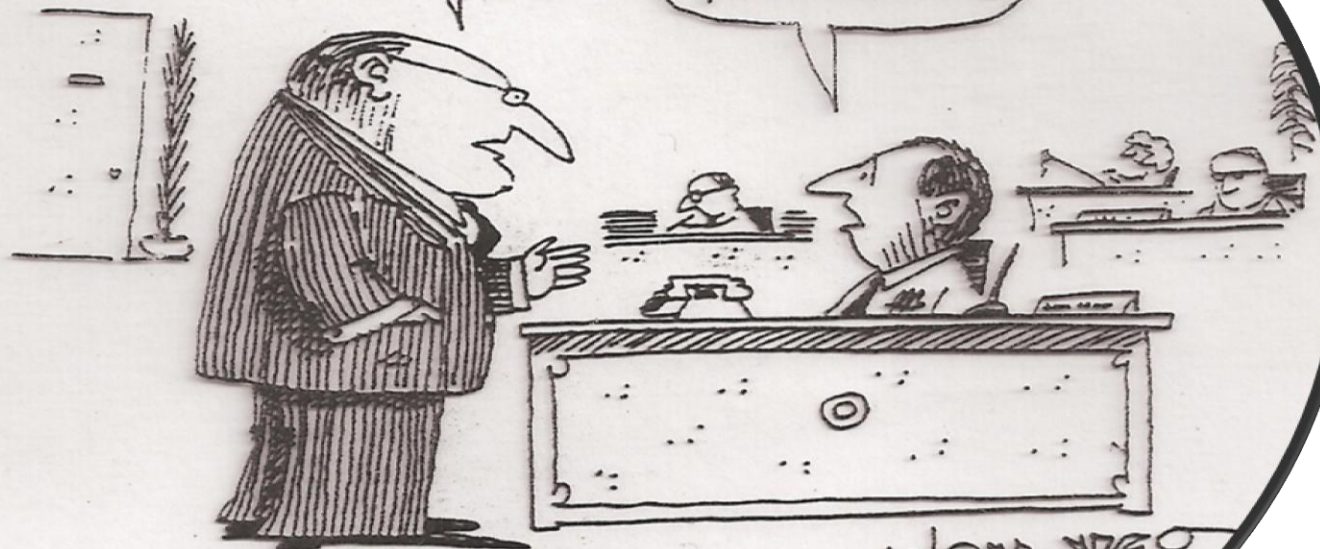
Assessment

Task analysis provides opportunity for formal assessment; <u>informal</u> assessment is ongoing

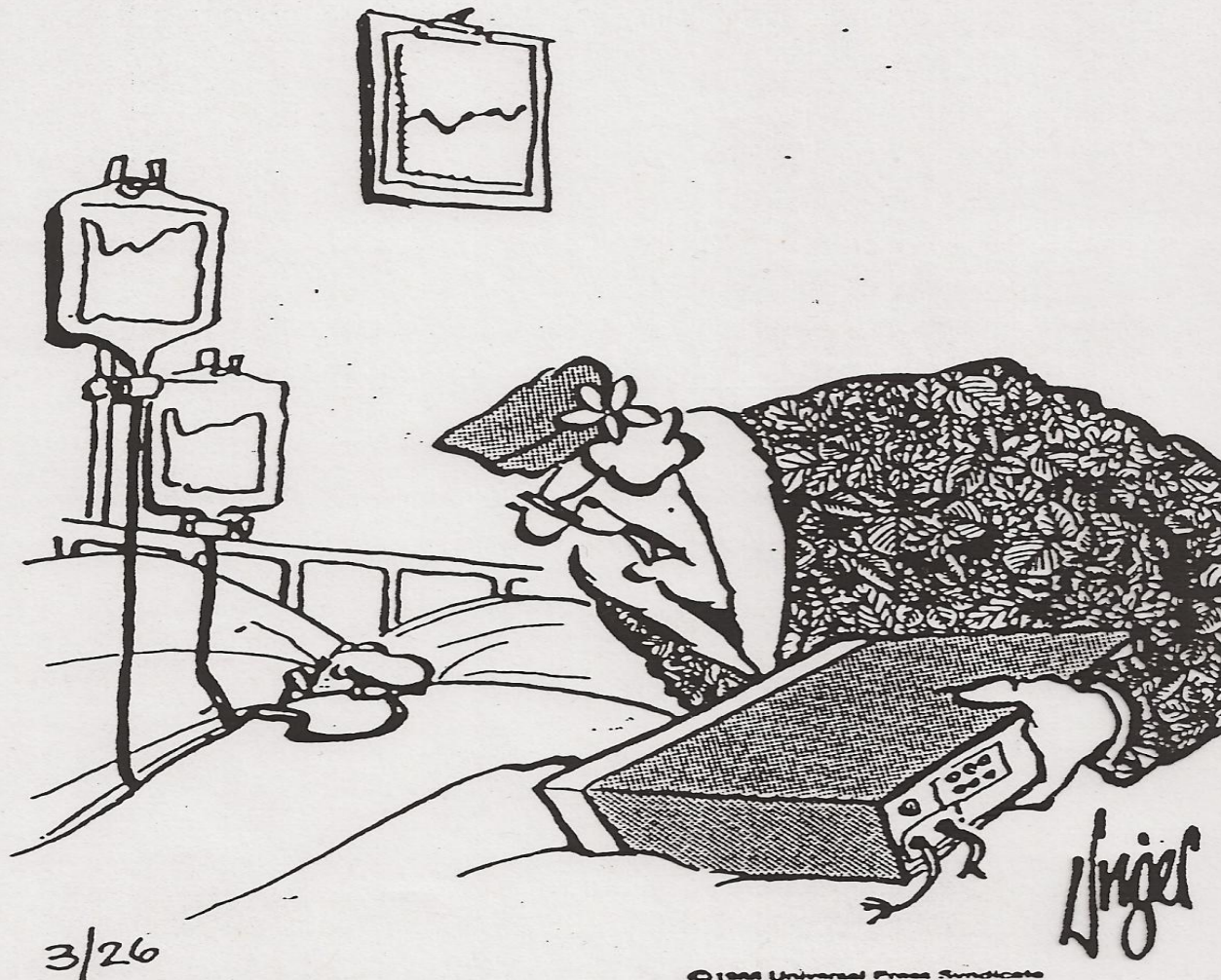<u>Always</u> looking for information from the learner's behavior to make appropriate training decisions

- ◦ Cause of difficult step
- ◦ Need for modifications in task design
- ◦ Social skill demands
- ◦ Effectiveness of reinforcer
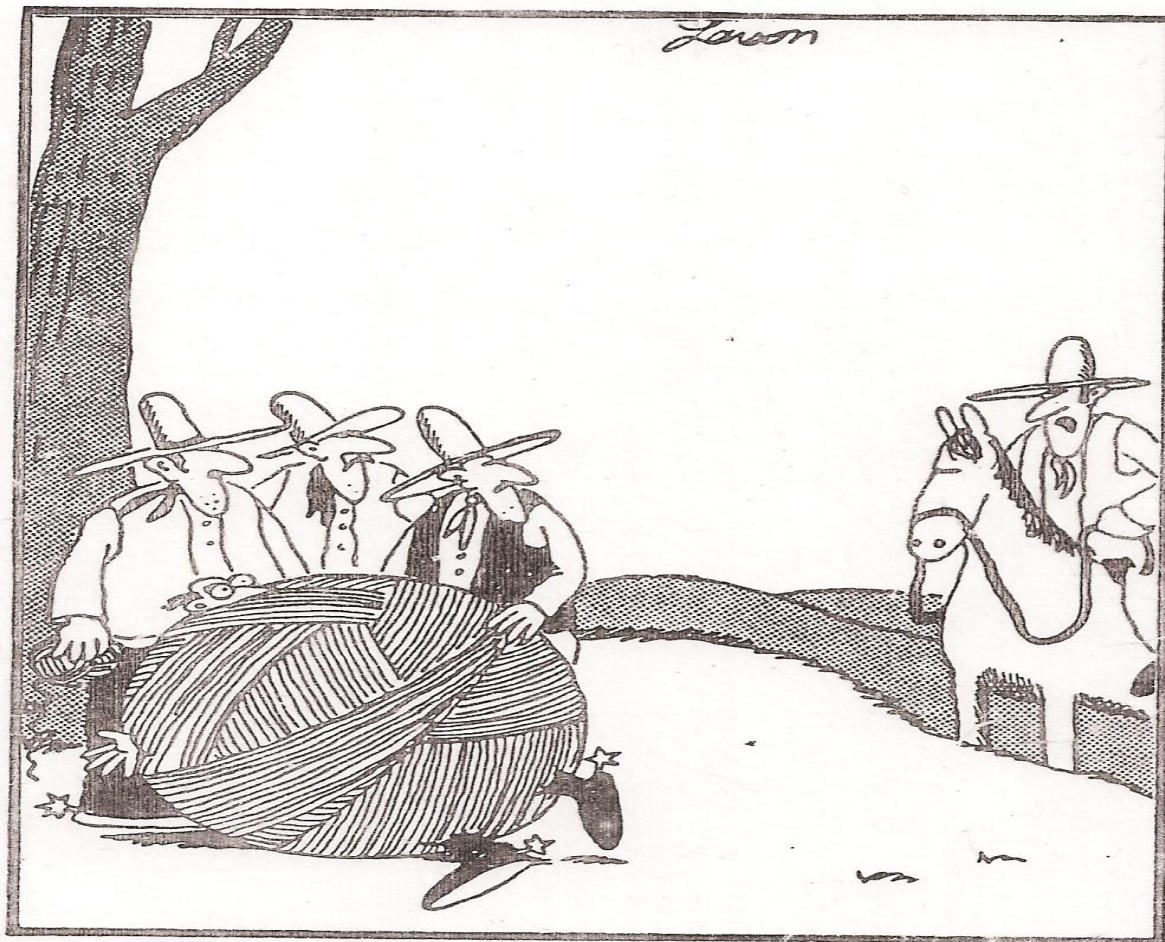
THE CLASSIC FAR SIDE / GARY LARSON

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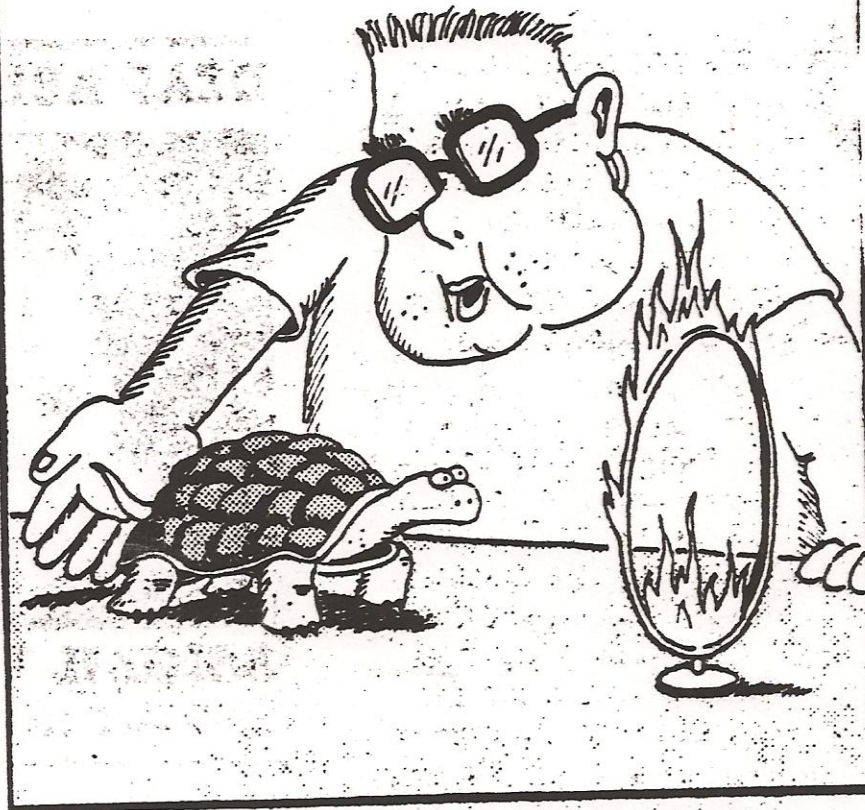
"Through the hoop, Bob! Through the hoop!"

"Hang him, ~~[illegible]~~ Hang him! . . . 'String-him-up' is a figure of speech!"